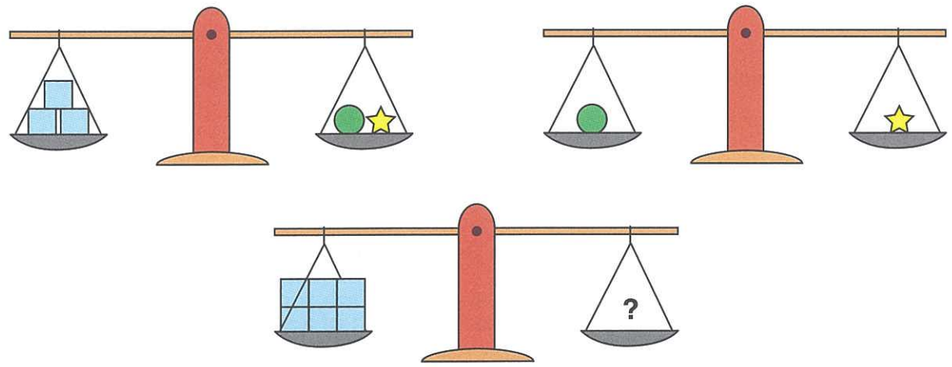
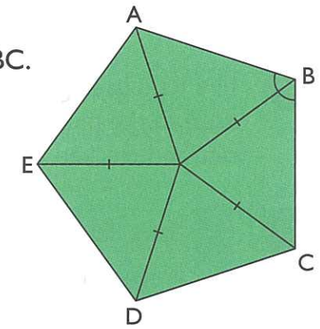
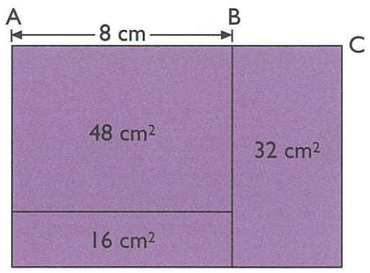
**41** Look at the figures below. How many ☆ are needed to balance the 6 cubes?




*42 The figure shown is not drawn to scale.
It is made up of 5 identical isosceles triangles. Find ∠ABC.




*43 The figure is made up of three rectangles.
The area of each rectangle is given.
Given that AB = 8 cm, find the length of BC.




*44 Kenneth earned $1560 in January, which was $270 less than what he earned in February. He spent $165 more in February than in January.

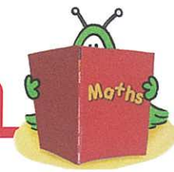
(a) In January, he spent twice as much as he saved. How much did he spend in February?

(b) How much did he save in the two months?



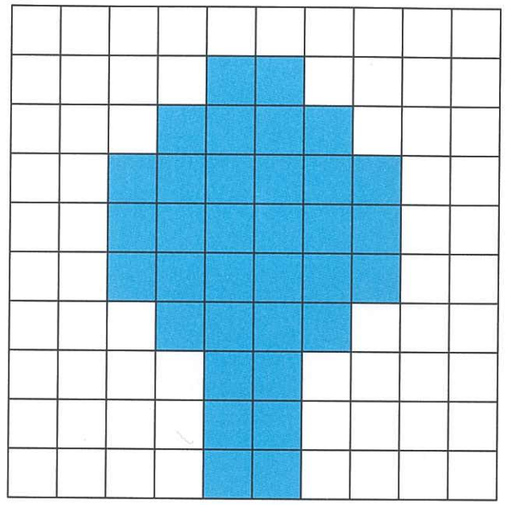
# 6 Percentage

Let's Learn!




## Finding Percentages

1  Let's recall.



The big square is divided into 100 equal parts.
34 parts are shaded.
The shaded parts can be expressed in the following ways:

| As a fraction | As a decimal | As a percentage |
|---|---|---|
| $\frac{34}{100}$ | 0.34 | 34% |

(a) Express each fraction as a percentage.

(i) $\frac{13}{20} = \frac{\square}{100}$

$= \square\%$

(ii) $\frac{19}{25} = \square\%$

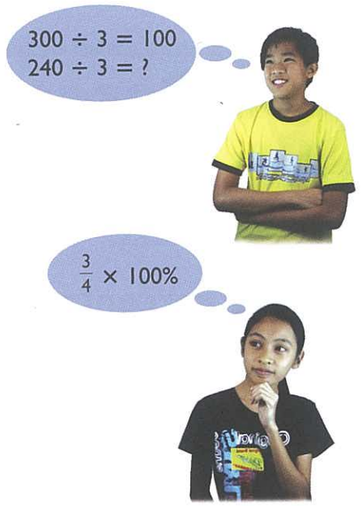
(iii) $\frac{240}{300} = \frac{\square}{100}$

$= \square\%$

(iv) $\frac{300}{500} = \square\%$

(v) $\frac{3}{4} = \square\%$

(vi) $\frac{5}{8} = \square\%$




**b** Express each decimal as a percentage.

(i) $0.45 = 0.45 \times 100\%$

$= \square\%$

(ii) $0.025 = \square\%$

(iii) $0.08 = \square\%$

(iv) $0.105 = \square\%$

**c** Express each percentage as a fraction in its simplest form.

(i) $45\% = \square$

(ii) $72\% = \square$

(iii) $8\% = \square$

(iv) $0.5\% = \square$

**d** Express each percentage as a decimal.

(i) $25\% = \square$

(ii) $91\% = \square$

(iii) $4\% = \square$

(iv) $0.9\% = \square$



**e** Express each fraction as a percentage. Round off your answer to the nearest whole number.

(i) $\frac{79}{120} \approx \square\%$

(ii) $\frac{150}{405} \approx \square\%$

(iii) $\frac{72}{303} \approx \square\%$

(iv) $\frac{429}{579} \approx \square\%$

**2** The table shows the number of boys and girls at a school camp.

| | |
|---|---|
| Number of boys | 22 |
| Number of girls | 28 |
| Total number of pupils | 50 |

What percentage of the pupils in the camp are boys?

## Method 1

$\frac{\text{Number of boys}}{\text{Total number of pupils}} = \frac{22}{50}$

$\frac{22 \times 2}{50 \times 2} = \frac{\square}{100}$

$= \square\%$

$\square\%$ of the pupils are boys.

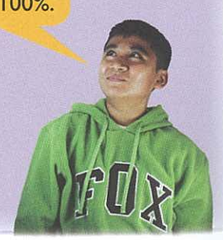

## Method 2

$\frac{\text{Number of boys}}{\text{Total number of pupils}} = \frac{22}{50}$

$\frac{22}{50} \times 100\% = 22 \times 2\%$

$= \square\%$

$\square\%$ of the pupils are boys.



**3** Julian had $28. He bought a book for $15. What percentage of his money did he spend? Express your answer correct to 1 decimal place.

$$\frac{\text{Amount spent}}{\text{Total amount of money}} = \frac{\square}{28}$$

$$\frac{\square}{28} \times 100\% \approx \square\%$$

He spent $\square$% of his money.

Remember to press [C] before you start working on the next sum.

**4** Amina bought 11 kg of chicken. She used 0.75 kg of the chicken to cook curry. What percentage of the chicken was not used? Express your answer correct to 1 decimal place.

Amount of chicken not used $= 11 - 0.75$

$= \square$ kg

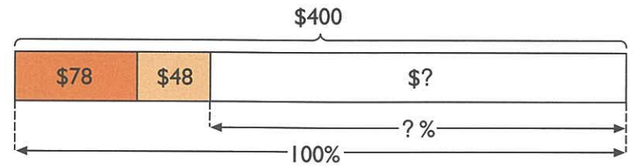
$$\frac{\text{Amount of chicken not used}}{\text{Amount of chicken bought}} = \frac{\square}{\square}$$

$$\frac{\square}{\square} \times 100\% \approx \square\%$$

$\square$% of the chicken was not used.



**5** Vivian had $400. She bought a pair of sunglasses for $78 and spent $48 on a pair of shoes. What percentage of her money was left?




Amount of money left $= \$400 - \$78 - \$48$

$= \$\square$

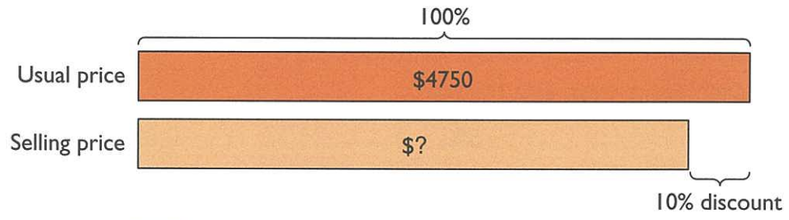
$$\text{Percentage of money left} = \frac{\square}{\square} \times 100\%$$

$= \square\%$

$\square$% of her money was left.

The total amount of money is 100%.

**6** The usual price of a piano was $4750. Mr Chew bought the piano at a 10% discount. He had to pay $49.50 of service charge on top of the selling price. What percentage of the selling price was the service charge? Express your answer correct to the nearest whole number.




Discount = $\$\square$

Selling price = $\$4750 - \$\square = \$\square$

$$\frac{\square}{\square} \times 100\% \approx \square\%$$

The service charge was $\square$% of the selling price.

## Let's Practise! 6a

**1** Express each of the following as a percentage.

(a) 9 out of 100
(b) 18 out of 200
(c) 165 out of 300
(d) 296 out of 400

**2** Express each fraction as a percentage.

(a) $\frac{1}{2}$
(b) $\frac{3}{5}$
(c) $\frac{7}{10}$
(d) $\frac{32}{50}$
(e) $\frac{24}{25}$
(f) $\frac{3}{4}$

**3** Express each decimal as a percentage.

(a) 0.9
(b) 0.17
(c) 0.03
(d) 0.028
(e) 0.005
(f) 0.104

**4** Express each fraction as a percentage.

(a) $\frac{3}{8}$
(b) $\frac{7}{16}$
(c) $\frac{28}{32}$

**5** Express each percentage as a fraction.

(a) 32%
(b) 5%
(c) 0.8%

**6** Express each percentage as a decimal.

(a) 55%
(b) 87%
(c) 7%

**7** Express each fraction as a percentage. Round off your answer to the nearest whole number.

(a) $\frac{47}{86}$
(b) $\frac{190}{345}$
(c) $\frac{84}{505}$
(d) $\frac{467}{975}$



Solve these word problems. Show your working clearly.

**8** Evelyn has a ribbon 420 cm long. She uses 216 cm to decorate a present. What percentage of the ribbon is left? Express your answer correct to 1 decimal place.

**9** A jug contained 780 ml of milk. Mrs Li poured 221 ml of the milk into a glass and 130 ml into a cup. What percentage of milk was left in the jug?

**10** The selling price of a pencil box was $4. Chee Keong bought the pencil box and paid $4.28 including GST. What percentage of the selling price was the GST?

**11** Mr Srinivasan invests $55 000 in a fixed deposit account. The interest rate is 3.3% per year. How much money will he have in the account after 1 year?

**12** Rahayu spent 2 h 25 min in a library. She spent 30 min of the time reading newspapers. What percentage of her time in the library was spent reading newspapers? Round off your answer to the nearest whole number.

WB 6A, p 121
Practice 1

NE Home Maths

Show your child a receipt that shows the inclusion of 7% GST for the purchase. Discuss with your child why Singapore needs to implement the GST. You can ask your child to use the Internet to search for information relating to the implementation of GST in Singapore.